

AMSH1	THNE FTITHV IVP--KQSAG PDYCD MENVE ELFNVDQHD--LITLGNHIT PTQTAFLS
AMSH2	THNE FTITHV IVP--KQSAG PDYCD MENVE ELFNVDQHD--LITLGNHIT PTQTAFLS
AMSH	MNE FTITHV LIP--KQSAG SDYCN TENEE ELFLIQDQ3--LITLGNHIT PTQTAFLS
Rpn11	TVRVIDVTAMPQS--GTGVS VLAVD PVEQA KMIDMLKQTGRFEMV VGWYBS PGFGCNLS
Jab1	TMIIMDS TALPVI GTETRVNAQAAA YEYDA AYIENAKQVGRLENA IGWYBS PGYGCNLS
	.....
AMSH1	SVL LHTHC SYQIMLPEALAI VCSFK HKDTG-----IFRLITNAGMLEVSAC KKKGFH--FH
AMSH2	SVL LHTHC SYQIMLPEALAI VCSFK HKDTG-----IFRLITNAGMLEVSAC KKKGFH--FH
AMSH	SVL LHTHC SYQIMLPEALAI VCSFK HKDTG-----IFRLITNAGMLEVSAC KKKGFH--FH
Rpn11	GV IN TDQS FALSR AVAV VVDPI QSVRGKVVID AFR LI NANMVLGHE PROTT SNLGH
Jab1	GIEVSTQMLNQQFQ PTVAVVID PFR TISAG----KVNIGAFRTY PRGYK PDEG PSEYQ
	.....
AMSH1	TKFPR LFSICKHV--LVKDIKI-----IVEDLR-----
AMSH2	TKFPR LFSICKHV--LVKDIKI-----IVEDLR-----
AMSH	SKDPPLFCSC SHVT--VVDRAV-----TITDLR-----
Rpn11	LNKPS IQALI HGLNRHYYSI TINYRKNELE QKMLLNLEKX SMMEGLTIQDYSEBCKHNE
Jab1	TIPLNKI ZDFGVHCKQYXALEVSYFKSSIDRKLE LLRNKYVNTLSSSS LITNADYTG
	.....
AMSH1	-----
AMSH2	L-----
AMSH	-----
Rpn11	VVKMIAIAK NDKA VKEEDKHIFEQLA K NVGEQDPKRHLETHVDVIMT SNIVQCLAM
Jab1	QVFDLSEKLEQSEAQLGRGS FNLG--LETHDRKSEDKLAK ATRDSCKTTLEATHGLMSQV
	.....
AMSH1	-----
AMSH2	-----
AMSH	-----
Rpn11	LOTVV FX-----
Jab1	IKDKLEFNINIS

FIGURE 1



COP9_su5_Hs	VGRLENAIGWYHSHPGYGCWLSGIDVSTQMLNQOFQEPFVA--VVIDPTRTISAGKVNLG
COP9_su5_Dm	VGRMEHAVGWYHSHPGYGCWLSGINVSTQMLNQTYQEPFVA--IVVDPVRTVSAGKVCLG
COP9_su5_At	AGRLENVVGWYHSHPGYGCWLSGIDVSTQRLNQOHQEPFLA--VVIDPTRTVSAGKVEIG
COP9_su5_Ce	EGRKEKVVGWYHSHPGYGCWLSGIDVSTQTLNQKFQEPWVA--IVIDPLRTMSAGKVDIG
AF2198_Arcfu	LPIGMKVFGTVHSHPSPCRPSEEDLSLFTRFGKYHIIVCY--PYDENSWKCYNRKGEEV
PH0451_Pyrho	MPHDESIKGTFFHSHSPFPYPSEGDLMFFSKFGGIHIIAAF--PYDEDSVKAFDSEGREV
TVN1035_Thevo	KPIDFSLVGSVHSHPSGITKPSDEDLRMFSLTGKIHIIVGY--PYNLKDYSAYDRSGNKV
MTH971_Metth	LPPFTGAVGSVHSHPGFVNLPAAADLHFFSKNGLFHIIAH--PYTMETVAAYTRNGDPV
aq_1691_Aquae	ISKGMEIVGVYHSHPDHPDRPSQFDLQRAFPDLSYIIFSVQ--KGKVASYRSWELKGDKF
RV1334_Myctu	EDADEVPVVIYHSHTATEAYPSRTDVKLATEPDAHYVLVSTRDPHRHELRSYRIVDGAVT
RadC_Ecoli	IKINASALILAHNHPSGCAEPSKADKLITERIIKSCQFMDL--RVLDHIVIGRGYVSFA
.....	.....HSHP.....S'D

FIGURE 3

COP9_su5_Hs	VGRLENAIGWYHSHPGYGCWLSGIDVSTQMLNQOFQEPFVA--VVIDPTRTISAGKVNLG
COP9_su5_Dm	VGRMEHAVGWYHSHPGYGCWLSGINVSTQMLNQTYQEPFVA--IVVDPVRTVSAGKVCLG
COP9_su5_At	AGRLENVVGWYHSHPGYGCWLSGIDVSTQRLNQHQEPFLA--VVIDPTRTVSAGKVBIG
COP9_su5_Ce	EGRKEKVVGWYHSHPGYGCWLSGIDVSTQTLNOKFQEPWVA--IVIDPLRTMSAGKVDIG
Pad1_Dm	TGRPEMVVGWYHSHPGFGCWLSGVDINTQQSFEALSERAVA--VVVDPIQSVKG-KVVID
Pad1_Hs	TGRPEMVVGWYHSHPGFGCWLSGVDINTQQSFEALSERAVA--VVVDPIQSVKG-KVVID
Sksl_Dd	TGRDEIVIGWYHSHPGFGCWLSVDVNTQQSFEQLQSRAVA--VVVDPLQSVRG-KVVID
Pad1_Sc	TGRDOMVVGWYHSHPGFGCWLSVDVNTQKSFEQLNSRAVA--VVVDPIQSVKG-KVVID
.....	HSHP''''''S 'D

FIGURE 4